

ABSTRACT OF THE DISCLOSURE

The optical module of the invention for high-speed bidirectional transceiver consists of a signal receiving unit, a signal transmitting unit, a common receiving-transmitting optical fiber, and a fiber coupling unit. The laser diode and the photodiode are arranged parallel to each other in closely located recesses of the module housing. Such an arrangement makes it possible to shorten distances for guiding lead wires from the terminals of the PC board to the respective terminals of the transmitting and receiving diodes. The laser diode emits a first transmitting laser beam that passes through a microobjective that collimates the beam and directs into onto a full-reflection mirror located inside the module housing. The full-reflection mirror reflects the first transmitting beam at an angle of 90° and transmits it to the end face of an optical fiber through an optical fiber collimator that centers the beam with the fiber core. The module is provided with a second mirror, which is fully transparent to the aforementioned first transmitting beam, but is fully reflective to a second transmitting beam that may propagate in a direction opposite to the first transmitting beam on a different wavelength. Alignment of the optical components is facilitated due to the fact that it is carried out with diffractionally limited and collimated beams.

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